ICF INTERNATIONAL

Memorandum

Date:	September 21, 2011
To:	Jerry Meral, Deputy Secretary, Natural Resources Agency Dale Hoffman-Floerke, Department of Water Resources
From:	David Zippin, Ph.D.
Subject:	Relationship of the Effects Analysis to the Biological Goals and Objectives in the BDCP

Introduction

At a meeting with NGOs on August 29, 2011, the question was asked whether the Effects Analysis of the Bay-Delta Conservation Plan (BDCP) would evaluate the biological goals and objectives. Additional questions arose as to how that process would occur given that many of the biological goals and objectives are being revised while the Effects Analysis proceeds. This memo attempts to answer both questions. This overview will also be included Appendix A of the Effects Analysis, the Conceptual Foundation and Analytical Framework.

Discussion

The biological goals and objectives for the BDCP express the intended biological outcomes of the Plan and serve as benchmarks for evaluating BDCP performance. The BDCP is expected to show progress toward attaining, and ultimately to attain, its biological goals and objectives. Biological goals are guiding principles for development of the conservation strategy and describe the desired future conditions of the Plan Area. Biological objectives provide metrics by which to measure progress in meeting goals and help inform the monitoring and adaptive management program. BDCP objectives may be either habitat or species-based and must be specific and measurable. When possible, biological objectives should be quantitative and state a timeframe.

While biological goals and objectives help guide the development of the plan's conservation measures, the conservation measures also help shape the goals and objectives. If monitoring data or other scientific information suggests that progress is not being made towards the biological objectives, decisions will be made whether and how to either refine the monitoring program, refine conservation measures, refine conceptual models (including hypotheses on the models are based), refine the biological objectives, or a combination of these outcomes, in the context of the BDCP adaptive management and monitoring programs (Figure 1, see Boxes 5a and 8). During plan implementation, as long as the permittees are properly implementing the conservation

strategy, they will be fulfilling their plan obligations in compliance with their federal and state permits.

The effects analysis will be an important tool to help the permit holders (i.e., authorized entities), Fish Agencies, and the public evaluate the expected outcomes of the BDCP. The effects analysis will examine the effects of BDCP actions on the same parameters that are reflected in the biological goals and objectives, including habitat availability, habitat quality, and population dynamics for each covered species. In this sense, the BDCP effects analysis will draw conclusions that are linked to biological goals and objectives.

As required by federal policy, biological objectives are measurable targets for achieving the biological goals (e.g., a water temperature threshold or an amount of a natural community restored). Some biological objectives are also geographically or temporally specific in their targets (e.g., target occurring in a specific Restoration Opportunity Area by a certain year). When analyses and data are available, the effects analysis will attempt to match that numeric, geographic, and temporal precision to provide conclusions to help illustrate the relationship between the conservation actions and the biological objective. However, in some instances that precision may not be possible due to a lack of monitoring data on which to base predictive models, the high variability of data, the unavailability or inadequacy of existing modeling tools, the disparity between the scale of modeling or temporal analysis reflected in the effects analysis and that used to frame the objective, or a combination of these and other factors. In some cases, only a qualitative effects analysis may be available to help evaluate a quantitative biological objective. In other cases, the effects analysis may draw conclusions on a geographic or time scale that is broader than the biological objective. Despite these challenges, the effects analysis will, when feasible, describe the relationship between the Plan's conservation measures and the biological goals and objectives.

Process

The effects analysis will consider the biological goals and objectives as they are revised and refined (final draft biological goals and objectives are expected in late 2011). In many cases, the metric for the biological objectives are known but the value for that metric is still being determined; until these values are set, the effects analysis will continue to focus on evaluating the metrics that are defined by the objectives. If the biological goals and objectives change significantly from that considered by the effects analysis, how the plan supports the revised goals and objectives may need to be reconsidered. This revision would occur in late 2011 and early 2012 as the roll-up and the complete effects analysis chapter are developed.

If at any point in the analytical process there is reason to believe that the biological goals or objectives cannot be met (based on the conclusions of the effects analysis or from other sources), then the goals, objectives, or conservation measures supporting them should be revised. This revision could occur prior to the draft BDCP, final BDCP or during plan implementation (see Figure 1).

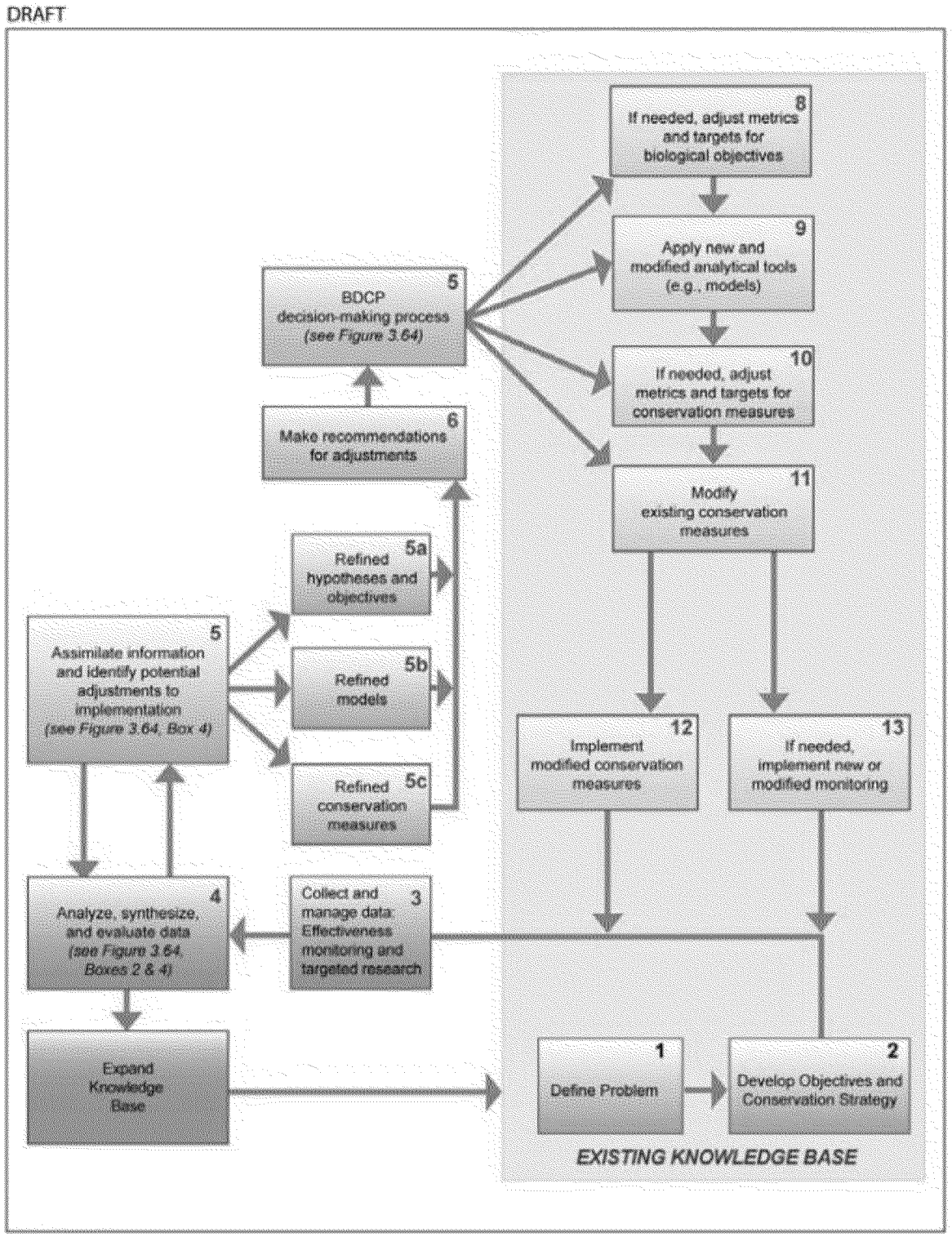

Figure 1. BDCP Adaptive Management Process Framework (Figure 3-63 in Plan).